

## DR. LÁSZLÓ SZALAY, PROFESSOR OF BIOPHYSICS IS 70 YEARS OLD



Professor LÁSZLÓ SZALAY founder and head of the Department of Biophysics at the József Attila University, Szeged was born on December 19, 1920 in Budapest. He spent his childhood at Kakucs, village in the Great Hungarian Plain near the capital. After finishing his studies with excellent results in the secondary school of Kunszentmiklós, he was enrolled to the teachers' training program in mathematics and physics at the Faculty of Natural Sciences of the University of Szeged. His interest and talent for theoretical and experimental physics was soon recognized and he became a research fellow at the Department of Experimental Physics as a third-year university student in 1943. After graduation, Dr. PÁL FRÖHLICH, professor of physics at the University of Szeged appointed him to his chair as an assistant and started his high-rising scientific career. In 1947, LÁSZLÓ SZALAY passed his examination for doctorate of philosophy (Ph.D.) in physics with "summa cum laude" on the subject of molecular luminescence. He was awarded the degree of Candidate of Physical Science in 1951 and defended his academic doctoral thesis on polarized luminescence of molecules in 1964. He founded the Department of Biophysics at the József Attila University, Szeged in 1969, gave the chair a characteristic educational and scientific profile and brought it in many respects to international level. In

addition to his duties at the University, he founded the Department of Biophysics of the Biological Research Center of the Hungarian Academy of Sciences at Szeged in 1971. The broad research field in photo-, neuro- and membrane biophysics, started here and partly conducted by him, became internationally recognized. From 1973, he has devoted all his time and energy to the education and research at the University.

Early in his undergraduate years, his research interest became engaged in the absorption and luminescence spectroscopy of organic dyes and he remained faithful to it all over his scientific career. Although the Department of Experimental Physics of University Szeged had some history in that field before his activity, the World War II caused serious losses both in teaching staff and properties. First as a young assistant, later as one of the prominent leaders of the department, he contributed substantially both to the reconstruction work and the establishment of new directions and methods in molecular spectroscopy. Dr. SZALAY was especially gifted in formulating and solving problems but was well trained in experimental works as well. He successfully joined to the work on the determination of the true luminescence characteristics of the dyes. This was not just a theoretical problem but had important practical consequences. The directly measurable fluorescence parameters (spectra, degree of polarization, quantum yield and lifetime) are sometimes heavily distorted by reabsorption and secondary (tertiary etc.) emission of light. He, together with his colleagues among others professors Á. BUDÓ and I. KETSKEMÉTY managed to develop a method to derive the true (molecular) fluorescence characteristics from the observed macroscopic quantities, and determined the conditions where the corrections were negligible and the measurable values delivered the true values directly. The migration of electronic excitation energy among organic dye molecules was one of his favorite topics. The basic principles of the energy transfer by inductive resonance were formulated by TH. FÖRSTER (Stuttgart) at the end of the forties. Dr. SZALAY immediately recognized the importance of the FÖRSTER's theory and applied it to his polarization studies. He saw clearly how the transfer of electronic excitation energy decreased the observed degree of polarization of fluorescence. Based on his essential and principal depolarization experiments, Dr. SZALAY has become an internationally acknowledged expert on polarization and energy transfer of molecular luminescence. In the second half of the sixties, his attention turned to photobiological problems and he soon established an active workshop and later a school of photophysics/biology. He focussed his research interest to the spectroscopy of fluorescent amino acids (tyrosine, tryptophane etc.) and photosynthetic pigments (chlorophylls, carotenes etc.). He studied the role of proper spatial and spectroscopic arrangement of the light-harvesting (absorbing) pigments in the funnelling of the excitation energy to the reaction sites (centers) of photosynthetic organisms.

Although Dr. SZALAY has consistently shown up significant scientific results and has been building up connections with scientists abroad, the (political)



atmosphere in Hungary and at the University did not favour the long-term research visiting status in laboratories abroad. He was already 45 years old and an acknowledged professor of biophysics when, for the first time, he could accept a one-year fellowship to the famous photosynthesis laboratory at the University of Illinois at Urbana, USA, headed by Dr. E. RABINOWITCH.

He has built up excellent cooperation with many laboratories in different countries and is highly interested in promoting the international relations among scientists. He facilitated the participation in common scientific research programs with among others the Institute of Plant Physiology of the University of Göttingen (Dr. W. WIESSNER), the Institute of Biophysics of the University of Illinois at Urbana (Dr. C.A. WRIGHT), the Laboratory of Photosynthesis, CNRS, Gif-sur-Yvette (Dr. J. LAVOREL), the Institute of Biophysics of the Lomonosov State University of Moscow (Dr. A. RUBIN), Laboratory of Biochemistry at Moscow (Dr. A.A. KRASNOVSKY), Christie Hospital and Holt Radiation Institute at Manchester (Dr. R. DALE) and Center of Fluorescence Spectroscopy at the University of Maryland at Baltimore (Dr. J. LAKOWICZ). Dr. SZALAY was invited lecturer in a number of international congresses, guest-professor in the USA (Albany, New York, 1970), in Germany (Tübingen, 1974) and in Egypt (Cairo, 1976). He was the organizer of several congresses and international symposia. Dr. SZALAY was present at the organization of the European Society for Photobiology (ESP) and worked for three years in the executive committee. In 1989, he was awarded the precious prize of the ESP for his pioneering activity in photobiology.

Beside his research activities, he always stressed the significance of teaching. Dr. SZALAY co-authored two books (Luminescence in Biology and Medicine, 1983 and Biophysics, 1985) and edited numerous university textbooks and practice-manuals for students in medicine and biology. About ten of his co-workers have been awarded the degree of Candidate of Biological Science and at least three times more students have made the Ph.D. work under his supervision. Since his enrollment as freshman half a century ago, Dr. SZALAY has attached firmly to our University. He has never left it (he kept the chair when he was the director of the Institute of Biophysics of the Biological Research Center of Szeged) although the temptation for better research conditions was sometimes very high. He served the institution on different levels: Vice-Dean (1956-59) and Dean (1969-72) of the Faculty of Natural Sciences, Pro-Rector (1965-68) of the University and Head of the School of Life Sciences during two terms.

It is impossible to close the appreciation without mentioning his kind personality. Even in critical situations, he can find the right way to treat people. This is a rare and highly positive feature and its cohesive effect on the structure and function of the School of Life Sciences was utilized several times. He never thrust himself forward but always did his best to help the scientific career of others. One of his striking achievements has been the realization of international cooperation with

numerous laboratories, and he offered many opportunities for his co-workers. He always remained a soft-spoken man of no pretension and guided us imperceptibly to the world of science, education, culture and humanity. We are very much grateful to professor SZALAY and wish him lifetime of happiness and good health.

DR.PÉTER MARÓTI